

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

F.R. KELLY & CO.
Attn. Boyce, Conor
27 Clyde Road
Ballsbridge
Dublin 4
IRELAND

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference P72844PC00	Date of mailing <i>(day/month/year)</i> 23/01/2006
International application No. PCT/EP2005/011010	International filing date <i>(day/month/year)</i> 11/10/2005
Applicant FOTONATION VISION LIMITED	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority



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Authorized officer

Tatjana Nebesky

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P72844PC00	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/EP2005/011010	International filing date (day/month/year) 11/10/2005	(Earliest) Priority Date (day/month/year) 28/10/2004
Applicant FOTONATION VISION LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1b

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2005/011010

A. CLASSIFICATION OF SUBJECT MATTER

G06T7/00 G06T5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/142285 A1 (ENOMOTO JUN) 31 July 2003 (2003-07-31)	27,29, 33-45, 47-49, 51,52
Y	* abstract, Figs. 2,3,4a-4d, paragraphs '0013-0014, 0047, 0051, 0057-0070, 0082-0093, 0099!	1-26,28, 30-32, 46,50
Y	US 2003/044070 A1 (FUERSICH MANFRED ET AL) 6 March 2003 (2003-03-06) * abstract, Figs. 2-6,8, paragraphs '0008, 0013, 0028-0032, 0063, 0067-0070, 0078-0089!, claim 1 * ----- -/--	1-26,28, 30-32, 46,50



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

13 January 2006

Date of mailing of the international search report

23/01/2006

Name and mailing address of the ISA

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Authorized officer

Borotschnig, H

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2005/011010

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/095197 A1 (WHEELER RICHARD B ET AL) 22 May 2003 (2003-05-22)	27,51,52
A	* abstract, Figs. 1a-1c, paragraphs '0024-0029, 0043, 0047! *	1-26, 28-50
A	SAHBA F ET AL: "Filter fusion for image enhancement using reinforcement learning" CCECE 2003. CANADIAN CONFERENCE ON ELECTRICAL AND COMPUTER ENGINEERING. MONTREAL, CANADA. MAY 4 - 7, 2003, CANADIAN CONFERENCE ON ELECTRICAL AND COMPUTER ENGINEERING. NEW YORK, NY : IEEE, US. vol. VOL. 3 OF 3, 4 May 2003 (2003-05-04). pages 847-850, XP010654204 ISBN: 0-7803-7781-8 * abstract, Fig. 1, sections 3, 5 *	1-52

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2005/011010

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 2003142285	A1	31-07-2003	CN	1437160 A	20-08-2003
US 2003044070	A1	06-03-2003	EP	1293933 A1	19-03-2003
			JP	2003109008 A	11-04-2003
US 2003095197	A1	22-05-2003	EP	1296510 A2	26-03-2003
			JP	2003163861 A	06-06-2003

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2005/011010

International filing date (day/month/year)
11.10.2005

Priority date (day/month/year)
28.10.2004

International Patent Classification (IPC) or both national classification and IPC
G06T7/00, G06T5/00

Applicant
FOTONATION VISION LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

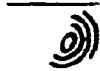
If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Authorized Officer

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/011010

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/011010

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-26,28,30-32,46,50
	No: Claims	27,29,33-45,47-49,51-52
Inventive step (IS)	Yes: Claims	
	No: Claims	1-52
Industrial applicability (IA)	Yes: Claims	1-52
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1 Reference is made to

D1: US2003/0142285 A1
D2: US2003/0095197 A1
D3: US2003/0044070 A1

2 Before discussing novelty/inventive step the following observations w.r.t. the clarity of the claims need to be made:

- 2.1 The present set of claims is not concise, due to the plurality of independent method claims 1 and 27 specifying different features, or apparently corresponding features in different terms. This also leads to a lack of clarity as to what the applicant considers to be the features necessary to the invention and how those features are to be defined. Thus the matter for which protection is sought is unclear.
- 2.2 The expressions "first/second/... acquired image" in the claims render the claimed subject matter unclear since they seemingly imply the idea of capturing multiple images. However, in actual fact, a single main image gets "acquired" (cf. Fig. 1(b)) and the different images (e.g. a subsampled copy of the main image, cf. claims 12 and 13) always result from processing the captured image. The terms "first/second acquired image" thus should be re-rendered as "capturing an image and obtaining a first/second image resulting from said captured image" - and they will be interpreted in this way in what follows.
- 2.3 The expression "b) analysing the first acquired image to provide a plurality of characteristics of an image" in claim 1 can be also interpreted as simply reading out the image capturing characteristics from a meta-file header stored in the image. In actual fact this line should imply "extraction of image characteristics through applying an image analysis prefilter to the image content" - and it will be interpreted accordingly in the following.

- 2.4 The expression "d) applying any such corrective processes" in claim 1 should actually read "d) applying any such determined corrective processes" because only those processes whose application is beneficial get executed - and it will be interpreted accordingly in the following.
- 3 The subject matter of present claim 1 lacks an inventive step w.r.t. D1 in combination with D2.
- * Document D1, which is considered to represent the closest prior art, discloses all the features of claim 1 (see above citations) except for the following:
- "determining if one or more corrective processes can be beneficially applied according to said characteristics; and applying any such corrective processes" (properly understood as stated in paragraph 2 above).

Instead, the system of D1 lets the image characteristics influence the parameters to be used during further processing, but it does not determine whether specific processes as a whole would be beneficial while others would fail to be so, and it does not apply only the beneficial ones.

The technical effect of the claimed features is to further speed up processing through improved control of (because only beneficial processes have to be applied.)

A person of ordinary skill in the applicable art (an engineer having a degree of a university or an engineering school and possessing special knowledge in the field red-eye image processing), knowing D1 and faced with the cited technical problem at the date relevant for the present application, would be prompted to consult the pertinent technical literature and thereby find red-eye correction document D2 which teaches in Fig. 2, paragraphs [0069-0089] that an image defect prediction process block is in control which correction effects to activate according to the need for improving certain defects, i.e. according to how beneficial they are for improving image quality. The overall speeding up through selective activation of processes is detailed in i.a. paragraph [0013] of D2.

Thereby being made aware of these advantages of the solution of D2 and having regard to the technical problem to be solved, the skilled person would wish to combine the approach of D1 with the teaching of D2, in particular its selective activation of image processes and red-eye detection processes. Thereby the skilled person would arrive at the claimed subject matter within the framework of the technical routine work associated with the normal progress of technology. The subject matter thus lacks an inventive step.

- 4 The same objections apply to the subject matter of claim 2 for corresponding reasons, since both D1 and D2 use the control data for controlling both the red eye detection and the image correction.
- 5 The foregoing analysis also remains valid for all other dependent claims 3-26 whose subject matter thus also lack an inventive step.
- 6 The subject matter of independent claims 27,51,52 lacks novelty w.r.t. D1 which teaches influencing the parameters of red-eye filters in accordance with image features, cf. again the cited passages and in particular, D1, paragraphs [0057,0059,0082-0093].
- 7 Lack of novelty arises for the same reasons also for claims 29, 33-45, 47-49.
- 8 Moreover, the analysis given for claim 1 also applies mutatis mutandis to independent claims 27,51,52 and to all claims 28-50 dependent on claim 27. The subject matter of these claims thus - in so far as it is not already lacking novelty w.r.t. D1 alone (see before) - lacks an inventive step w.r.t. D1+D2 for the reasons cited w.r.t. claim 1. In principle this objection applies to all claims 27-52 but in particular to the remaining claims, 28,30-32,46,50.
- 9 In addition to the foregoing analysis it is also briefly noted w.r.t. claim 27,51,52 that their subject matter could actually also be read on image feature extraction and the subsequent use of these features for taking decisions in an algorithm consisting of various red-eye detection filtering substeps. This is common in red-eye detection in general, for an example cf. D3 Fig. 1. In D3 image features determine which

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2005/011010

processing route is eventually taken in a red-eye detection algorithm, i.e. which "red-eye subfilters" eventually will get employed. The subject matter of claims 27, 51 and 52 thus lacks novelty also w.r.t. such general prior art.